

### Claims

1. Process for the purification of water, characterized  
5 in that a solution containing a proportion of a mixed  
microbiotic culture is added to the water in an  
environment having catalytic activity.
2. Process in accordance with claim 1, characterized in  
10 that the catalytically active environment is brought  
about by catalytically active surfaces.
3. Process in accordance with claim 2, characterized in  
that a ceramic or polymer surface doped with catalyst  
15 substances is used as said catalytically active  
surface.
4. Process in accordance with claim 3, characterized in  
that organic and/or inorganic catalyst compounds are  
20 used as catalyst substances.
5. Process in accordance with claim 3 or claim 4,  
characterized in that titanium dioxide ( $\text{TiO}_2$ ) is  
contained in said ceramic surface.  
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6. Process in accordance with claim 5, characterized in  
that said ceramic surface used is a tile.
7. Process in accordance with at least one of claims 1  
30 to 6, characterized in that said mixed culture  
contains photosynthetically active microorganisms and  
luminous bacteria in a biological solution.
8. Process in accordance with claim 7, characterized in  
35 that prochlorophytes, cyanobacteria, green sulphur  
bacteria, purple bacteria, chloroflexus-type forms

and heliobacterium and heliobacillus-type forms as well as mixtures of two or more of these are contained in said mixture as facultatively phototropic microorganisms.

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9. Process in accordance with claim 7 or 8, characterized in that Photobacterium phosphoreum, Vibrio fischeri, Vibrio harveyi, Pseudomonas lucifera or Beneckea or mixtures of at least two of these are contained in said mixture as luminous bacteria.

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10. Process in accordance with at least one of claims 1 to 9, characterized in that said solution contains as secondary constituents plant extracts, enzymes, trace elements, polysaccharides, alginic derivatives, other microorganisms, either singly or in combination.

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11. Process in accordance with at least one of the preceding claims, characterized in that the water to be purified is stirred continuously or intermittently.

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12. Application of the process in accordance with at least one of claims 1 to 11 for the purification of effluents.

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13. Application in accordance with claim 12, characterized in that pump sumps and waters in purification plants are purified.

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14. Application of the process in accordance with at least one of claims 1 to 11 for the purification of waters in public and private installations.

15. Application in accordance with claim 14 for removing algae.

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